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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOCHEN ALTFELD, RALF OSBURG, TOBIAS KLEGRAF, CHRISTOPH BEYER, MARKUS MOHR, KARL LAMPE, and SEBASTIAN FRIE

Appeal 2014-008213
Application 12/092,297
Technology Center 3700

Before MICHELLE R. OSINSKI, BEVERLY M. BUNTING, and GORDON D. KINDER, *Administrative Patent Judges*.

KINDER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants[1] appeal under 35 U.S.C. § 134 from a rejection of claims 1, 3, and 6–14. An oral hearing was held on January 17, 2017. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

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[1] Appellants identify the real party in interest as Polysius AG, a company having offices at Graf-Galen-Straβe 17, 59269 Beckum, Germany. Appeal Br. 1.

CLAIMED SUBJECT MATTER

The claims are directed to a plant and method for the production of cement clinker. Independent claim 1, reproduced below, illustrates the claimed subject matter:

> 1. A plant for the production of cement clinker from cement raw meal, the plant comprising:
>
> - a preheating zone for preheating the cement raw meal,
> - a calcining zone for precalcining the preheated cement raw meal, the calcining zone in fluid communication with the preheating zone,
> - a sintering combustion zone for completely burning the precalcined cement raw meal to cement clinker, the sintering combustion zone in fluid communication with the calcining zone,
> - a cooling zone for cooling the hot cement clinker, the cooling zone in fluid communication with the sintering combustion zone,
> - and at least one additional combustion region for producing heat for the production of the cement clinker, the at least one additional combustion region has an intake opening for the admission of solid fuels, a discharge opening for the removal of the resulting combustion products, a firing region, at least one conveyor device for transporting the fuel and means for supplying oxygen-containing gas, the firing region being in such a form that the fuel introduced into the firing region forms a fuel bed and the means for supplying oxygen-containing gas having an inlet into the firing region and arranged above the fuel bed such that oxygen-containing gas flows over the fuel bed,
>
> the at least one additional combustion region in the form of an underfeed furnace and the conveyor device is provided outside the firing region and is in such a form that it introduces the fuel into the firing region and thereby moves the fuel bed in the direction towards the discharge opening.

REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Burton	US 1,953,335	Apr. 3, 1934
Azbe	US 3,142,480	July 28, 1964
Garrett	US 4,022,629	May 10, 1977
Nuesmeyer	US 4,922,889	May 8, 1990

REJECTIONS

The Examiner made the following rejections:

Claim 13 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Claims 1, 3, and 6–14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Garrett, Burton and Nuesmeyer.

Claims 1, 3, and 6–14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Azbe, Burton and Nuesmeyer.

OPINION

Claim 13 Rejected as Indefinite.

Claim 13 depends from claim 1 and adds that the additional combustion chamber "is in the form of a separate combustion chamber." Appeal Br. 16 (Claims App.). The Examiner finds this claim indefinite because it does not define from what the additional combustion chamber is separate. Final Act. 2. The Examiner's Answer adds, "[c]laim 13 omits any structural relationship or frame of reference for the recitation of the 'separate combustion chamber.'" Ans. 3. Appellants urge that by referring to the Specification one can determine that the combustion region 1 can be

separate from a preheating zone, the calcining zone 19, sintering combustion zone 20 and cooling zone 21. Appeal Br. 4–5. Accordingly, Appellants argue, one skilled in the art would know that the additional combustion region is separate from these other zones. *Id.*

The response to an indefiniteness rejection by a patent applicant "can take the form of a modification of the language identified as unclear, separate definition of the unclear language, or in or in an appropriate case, a persuasive explanation for the record of why the language at issue is not actually unclear." *In re Packard*, 751 F.3d 1307, 1311 (Fed. Cir. 2014). In this case, Appellants take the third course, but fail to persuade us that the language is not actually unclear. For example, the additional combustion region could be separate from only one of the identified zones, or from two of the identified zones, but not necessarily from all of the identified zones. With no clear statement specifying from what the additional combustion region is separated, we are not persuaded of Examiner error in rejecting claim 13 as indefinite.

Claims 1, 3, 6–14 Rejected as obvious over Garrett or Abze in light of Burton and Nuesmeyer.[2]

Examiner Failed to Identify Particular Parts of References Relied on.

Appellants correctly assert the Examiner has failed to identify the particular parts of the references relied on. Appeal Br. 8–9. For example, both the Final Action and the Answer state that the primary references, Garrett and Azbe, show the four claimed zones and the claimed "***at least one additional combustion region***" (Final Act. 3–4, 10; Ans. 3–6 (emphasis

[2] Because the rejection based on Garrett and the rejection based on Abze suffer from the same deficiency, we address both rejections together.

added)), but at no point are the parts of the references relied on as the additional combustion region identified in any way. In connection with Garrett, the Examiner identifies the sole Figure and ***all*** of the text ("Fig. 1 and col 1–12", Final Act. 4) as supporting his findings. The Examiner made a similar citation to all of Azbe. Final Act. 10. After making findings which identified ***no*** particular parts or passages from the secondary reference, Burton, the Examiner again cited the entire reference and all 10 figures of Burton, adding without explanation "including Fig. 1 and 8." Final Act. 5, 11. The Examiner's citation to Nuesmeyer is equally broad and uninformative. Final Act. 7, 11. The Examiner's Answer adheres to these findings (Ans. 3), and responds to the Appellants' arguments by reproducing the principal references' Figures and making the same unsupported findings about "additional regions." Ans. 4–6.

In establishing a prima facie case of obviousness, "[w]hen a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable." 37 C.F.R. § 1.104(c)(2). In this case the Examiner, by repeatedly citing to entire prior art references, has failed to comply with this regulation.

Not All Limitations Taught.

The Appellants do not dispute that the primary references to Garrett and Azbe disclose the four claimed zones, namely, a preheating zone, a calcining zone, a sintering combustion zone and a cooling zone. Appeal Br.

9–12, Reply Br. 2. Appellants argue that the additional references relied on, Burton and Nuesmeyer, do not teach:

> at least one additional combustion region . . . having:
>
> (a) an intake opening, a discharge opening, a firing region[,] at least one conveyor device[,] and *a means for supplying oxygen-containing gas*; and
>
> (b) the *means for supplying oxygen-containing gas having an inlet* into the firing region and *arranged above the fuel bed such that oxygen-containing gas flows over the fuel bed.*

Appeal Br. 7–8; *see also* Reply Br. 2.

The Examiner finds that Burton teaches the italicized features in paragraphs (a) and (b) above. Ans. 7.[3] For example, the Examiner finds that the air openings 22 shown in Burton Figure 1 constitute "means for supplying oxygen-containing gas 9 seen in Fig. 2 of [Appellants'] application." Ans. 7. We do not agree with the Examiner. As Appellants point out, Burton actually discloses that "air from the tuyère openings 22 enters the bed, and with volatile matter and gases passes upwardly through the incandescent top of the bed." Burton, p. 2, ll. 41–44. Accordingly, in Burton, the means for supplying oxygen-containing gas, i.e., the tuyère openings 22, does not have an inlet arranged above the fuel bed so that gas flows *over* the fuel bed. Instead, the air from the tuyère openings 22 flows *through* the fuel bed.

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[3] The Examiner also finds that Burton discloses "at least one additional combustion region for producing heat for the production of the cement clinker." Final Act. 5, Ans. 3. We find no mention in Burton of the manufacture of cement. Burton states that it "relates to improvements and furnaces, particularly furnaces of the under-feed type, and has special reference to improvements in automatic means for supplying fuel and air thereto." Burton, p. 1, ll.1–5.

The Examiner also finds that Nuesmeyer discloses

> at least one additional combustion region for producing heat for the production of the cement clinker,[4] the at least one additional combustion region has an intake opening for the admission of solid fuels, a discharge opening for the removal of the resulting combustion products, a firing region, at least one conveyor device for transporting the fuel and means for supplying oxygen-containing gas, the firing region being in such a form that the fuel introduced into the firing region forms a fuel bed and the means for supplying oxygen-containing gas having an inlet into the firing region and arranged above the fuel bed such that oxygen-containing gas flows over the fuel bed, the at least one additional combustion region is in the form of an underfeed furnace and the conveyor device is provided outside the firing region and is in such a form that it introduces the fuel into the fire region and thereby moves the fuel bed, in the direction towards the discharge opening.

Final Act. 7, *see also* Ans. 9–11. The Answer provides an annotated Figure 5 from Nuesmeyer with a circle that encompasses air openings 56, 59, 62, and 63 and identifies them all as air inlets above a fuel bed. Ans. 10. Because the Examiner fails to identify the particular part(s) relied on, we address each row of air inlets in turn. The lowermost row of these openings is formed by underfire air holes 56. Underfire air holes 56 allow combustion air to be injected "approximately horizontally . . . into the burning fuel to provide primary combustion." Nuesmeyer 3:59–62. Thus, the Examiner is incorrect if he asserts that the underfire holes 56 meet the italicized limitations because they are not "arranged above the fuel bed." Appeal Br.

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[4] Nuesmeyer discloses a stove for burning pellets or wood chips for domestic heating purposes. Nuesmeyer 1:9–12. We find no support for the Examiner's finding "at least one additional combustion region for producing heat *for the production of the cement clinker*." Final Act. 7 (emphasis added).

14 (Claims App.). Moving upward, the next row of air holes are crossfire air holes 59. These holes are located around the periphery of the burn pot 35 and direct air vertically, thereby containing the burning gases over the burn pot. Nuesmeyer 4:6–10. Again, the Examiner is wrong if he is contending that the crossfire holes 59 meet the italicized limitations because, given their vertical orientation, they are not arranged such that air "flows over the fuel bed." Appeal Br. 14 (Claims App.). Moving upward, the next row of air holes are overfire holes 62. These holes

> deflect crossfire air towards the center of the area over burn pot **35** [] and [] inject streams of air directly over the periphery **40**. These functions serve to provide additional combustion air to foster the burning of rising gases and confine the flames to a region directly over the burn area.

Nuesmeyer 4:34–39. Finally, the top row is formed by overfire holes 63 which "direct a stream of combustion air into the uppermost region of the flaming gases to complete the combustion process. This secondary combustion process is a result of the combination of crossfire and overfire air." Nuesmeyer 4:39–43. Accordingly, we find that Nuesmeyer discloses air outlets, namely overfire holes 62 and 63, "arranged above the fuel bed such that oxygen containing gas flows over the fuel bed," as recited in claim 1.

In their Reply Brief, Appellants discuss the holes 62 and 63 by identifying them and merely denying that they meet the italicized claim limitations. Reply Br. 4. More than a recitation of the claim limitation and denying its presence in the prior art is required. *See* 37 C.F.R. § 41.37 (c)(1)(iv); *In re Lovin*, 652 F.3d 1349, 1357 (Fed. Cir. 2011).

In view of the foregoing, we are not convinced by Appellants' argument that "the cited prior art fails to show or suggest each and every element of claim 1." Appeal Br. 11.

Motivation to Combine.

Appellants also argue that the Examiner failed to provide a sufficient showing of motivation to combine or modify the references. Appeal. Br. 11–12. The Final Action cites Burton's suggestion for a furnace in which combustion is efficient and complete and which is inexpensive and compact, but never specifies what features or teachings of Burton are to be combined with corresponding features from the principal reference. Final Act. 9. The Examiner made the same uninformative conclusion about Azbe combined with Burton. Final Act. 11.

In response, Appellants point out that the Examiner specifically mentions only providing a ***furnace*** that is efficient and ensures complete combustion. Appeal Br. 11, citing Final Act. 9. Appellants concede that Burton and Nuesmeyer teach ways to make efficient furnaces, but argue that there is no motivation to ***add*** an additional combustion region, even an efficient one, to an existing cement manufacturing plant. Appeal Br. 11.

The Examiner's Answer alleges it is well-known in the furnace art to provide additional combustion chambers to assure complete combustion, but provides no supporting evidence. Ans. 11. As motivation for making the claimed combination, the Examiner relies on "some teaching, suggestion, or motivation to do so found in both the references themselves as well as in the knowledge generally available to one of ordinary skill in the art." Ans. 11. As evidence the Examiner cites only Burton's suggestion that efficiency is an obvious furnace design goal (*id.* at 11–12 (citing Burton p. 1, ll. 6–13))

and a teaching from Nuesmeyer that adjusting air pressure and maximizing efficiency are desirable (*id.* at 12 (citing Nuesmeyer 7:1–15.)) Finally, the Examiner adds, without explanation or analysis, that "mere duplication of the essential working parts (e.g., combustion regions) of a device involves only routine skill in the art." Ans. 12 (emphasis omitted).

Our reviewing court has set forth the standard for determining the sufficiency of an Examiner's rejection:

> [T]he PTO carries its procedural burden of establishing a prima facie case when its rejection satisfies 35 U.S.C. § 132, in "notify[ing] the applicant . . . [by] stating the reasons for [its] rejection, or objection or requirement, together with such information and references as may be useful in judging of the propriety of continuing the prosecution of [the] application." That section "is violated when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection."

In re Jung, 637 F.3d 1356, 1362 (Fed. Cir. 2011) (citations omitted) (alterations in original). Moreover, the Examiner is required to supply

> "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."

KSR Int'l Co. v. Teleflex, Inc., 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). As the Federal Circuit recently reiterated in *In re Nuvasive*, "the PTAB must articulate *a reason why* a PHOSITA [person having ordinary skill in the art] would combine the prior art references." *In re Nuvasive*, No. 2015-1670, slip op. 9. (Dec. 7, 2016). Here the Examiner's proffered reasoning for adding an additional combustion region to an existing cement kiln lack rational underpinning. The evidence from the Burton and Nuesmeyer references relates to the

design of furnaces, not to the addition of an additional combustion region to a cement kiln.

The Examiner's reliance, without explanation, on a rule that mere duplication of essential parts is routine, is insufficient. Mere duplication of parts is an older per se rule of unpatentability that is highly disfavored in recent case law since it basically eliminates a need for fact specific analysis of claims and the prior art. *See, e.g.*, *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995). Here, the Examiner has not identified which part of the principal references is to be duplicated nor why one would do so. Accordingly, we agree with the Appellants that the Examiner has not provided a prima facie case of obviousness.

DECISION

For the above reasons, the Examiner's rejection of claim 13 as indefinite is sustained. The Examiner's rejection of claims 1, 3, and 6–14 as unpatentable under 35 U.S.C. § 103(a) is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2009).

AFFIRMED-IN-PART